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Learning Disabled Students' Performance on the
Child Behavior Checklist

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Directed Research: Undergraduate Thesis

Running Head: Learning Disabled Students' Scores on the CBCL

Abstract

The research to date on the behavioral and emotional problems of learning disabled students has focused mainly on young boys. A majority of the studies in this area have been done by Michael Epstein (Epstein, Cullinan, & Rosemier, 1983; Epstein & Cullinan, 1984; Epstein, Cullinan, & Neiminen, 1984; Epstein, Bursack, & Cullinan, 1985; Epstein, Cullinan, & Lloyd, 1986). He used the Behavior Problem Checklist (Quay & Peterson, 1987) to determine which behavioral/emotional items, rated by teachers of learning disabled students, loaded on certain factors. However, this instrument has been shown to be relatively unreliable; therefore, the Child Behavior Checklist (Achenbach & Edelbrock, 1983) was used in this study. In this study, forty-three learning disabled children (boys and girls) from 5 to 16 were evaluated. The children's parents filled out the Child Behavior Checklist based on their perceptions of their children's behavioral/emotional problems. It was hypothesized that learning disabled children would differ from the non-clinical and clinical samples (that is, the original samples upon which the CBCL norms are based) on certain subscales of the Child Behavior Checklist. Primary analyses were performed on these hypotheses and some significant differences

were found between the learning disabled sample and the non-clinical disabled sample and between the learning disabled sample and the clinical sample. It was found that the learning disabled children were significantly elevated on twenty-two out of twenty-five subscales as compared to the non-clinical sample.

Introduction

Research that has been done on learning disabilities has mainly focused on academic underachievement, perceptual and cognitive ability deficits, and oral and written language disorders, but problems with learning disabled pupils' social, emotional, and behavioral development has received little attention (Epstein, Cullinan, & Rosemier, 1983). Few existing studies have attempted to describe the patterns of learning disabled students' behavioral and emotional problems (Epstein, Bursack, & Cullinan, 1985; McConaughy, 1986).

Although the category of learning disabilities is usually defined to exclude students with "primary" emotional problems, it is widely acknowledged that behavioral and emotional problems are often associated with learning disabilities (Bryan & Bryan, 1977). Many professionals are concerned with early identification and assessment of children with learning disabilities. A

number of different screening tests are used for this purpose, but a lack of empirical evidence has hampered some of the early identification and assessment processes with children who demonstrate behavior disorders (Thompson, Curry, Sturner, Green, & Funk, 1982). The category of learning disabilities is one that is widely studied, but the research seems to be focused too much in certain areas while other important areas are left to speculation.

In the present study, learning disabled students' scores on subscales of the Child Behavior Checklist (CBCL) (Achenbach & Edelbrock, 1983) will be compared to normative scores for clinical and non-clinical groups. These scores will also be used to determine if a profile for identifying learning disabled children can be found. In the upcoming sections the following topics will be discussed: Prevalence and Diagnosis of Learning Disabilities, an Overview of Child Behavior Checklists Used With Learning Disabled Children, Reliability and Validity of the CBCL, a Literature Review, Parent and Teacher Evaluations, and the proposed study.

Prevalence and Diagnosis of Learning Disabilities

Learning disabilities have apparently become more prevalent in the United States over the past two decades. In 1969, 120,000 public-school students were classified as learning disabled; by the 1987-88 school year, the number had grown to 1.9 million, 4.4 percent of America's school-aged population (Arrandale, Reynolds, Wang, Walberg, & Keogh, 1989). During the 1987-88 school year, children with learning disabilities accounted for almost half (47 percent) of all students aged 6-21 receiving special education services under the 1975 Education for all Handicapped Children Act (Arrandale et al., 1989). The Diagnostic and Statistical Manual of Mental Disorders, or DSM III-R (American Psychiatric Association, 1987), is just that; a manual that is used nationally by clinicians to diagnose mental disorders. The DSM III-R does not recognize the term "learning disabilities" per se, but defines three Academic Skills Disorders:

- 1) Developmental Arithmetic Disorder,
- 2) Developmental Expressive Writing Disorder, and
- 3) Developmental Reading Disorder.

These disorders are identified in the following way:

- A) Arithmetic skills (Writing skills or Reading achievement), as measured by a standardized, individually administered test, are markedly below the expected level, given the person's schooling and intellectual capacity (as determined by an individually administered IQ test).
- B) The disturbance in A significantly interferes with academic achievement or activities of daily living requiring arithmetic skills (the composition of written texts or reading skills).
- C) Not due to a defect in visual or hearing acuity or a neurological disorder (American Psychological Association, 1987, pp. 42-44).

While there are different definitions and criteria used, these are the criteria that are typically adopted by psychology clinics, mental health centers, and most mental health professionals that deal with learning disabled students.

Overview of Child Behavior Checklists Used With Learning Disabled Children

In this section three different child behavior checklists will be reviewed:

The Behavior Problem Checklist, The Revised Behavior Problem Checklist, and The Child Behavior Checklist. The structure, validity, and reliability of each instrument will be discussed.

Behavior Problem Checklist

On the Behavior Problem Checklist (BPC) (Quay & Peterson, 1975) the rater, who is usually the child's teacher, judges the degree of severity from 0-2 (0 = does not constitute a problem, 1 = constitutes a mild problem, and 2 = constitutes a severe problem) of 55 behavior problem items as shown by a particular child. The scores are then compiled into scales (e.g. Conduct Problems & Personality Problems) and compared to normative samples. Some researchers analyze the data further and perform a principal-components factorial analysis for each of the groups that is being studied (e.g., learning disabled vs. "normal" or boys vs. girls). In one approach taken by Epstein, items that loaded .40 or greater on one of the four factors were retained. If the same item loaded .40 or greater on two or more factors, it was assigned to the factor on which it loaded the highest. Internal consistency reliability coefficients for Conduct Problems and Personality Problems have been found to be greater than .80. On the other hand, internal consistency reliability

coefficients for Immaturity-Inadequacy are much lower. Test-retest reliability has been found to be greater than .80 at 2 weeks, but after a year it is from .30-.50. Interrater reliability has ranged from .20-.40. Finally, the manual cites many studies that have demonstrated acceptable validity for the BPC (Martin, 1988).

Revised Behavior Problem Checklist

The Revised Behavior Problem Checklist (RBPC) (Quay & Peterson, 1987) was developed as a revision to the BPC. On the RBPC a rater (usually the child's teacher) judges the degree of severity of a child's behavior from 0-2 (0 = does not constitute a problem, 1 = constitutes a mild problem, 2 = constitutes a severe problem) on 89 items. There are six scales that the items are loaded on: Conduct Disorder, Socialized-Aggression, Attention Problems-Immaturity, Anxiety-Withdrawal, Psychotic Behavior, and Motor Excess. The internal consistency reliability, interrater reliability, and test-retest reliability of this instrument appear to be adequate. Concurrent and construct validity also appear to be adequate (Sattler, 1988). This instrument therefore appears useful for identifying dimensions of deviant behavior in learning disabled children.

Child Behavior Checklist

The Child Behavior Checklist (CBCL) (Achenbach & Edelbrock, 1978) is an instrument designed to record in a standardized format the competencies and behavioral problems of children aged four through sixteen. The raters of the instrument can be parents, teachers, the child him/herself, or someone else who may know the child well. There are 113 behavior problem items on the CBCL that are scored on a three point response scale (0 = not true, 1 = somewhat or sometimes true, and 2 = very often or often true) and there are also twenty social competence items. The social competence items are based on the raters' reports of the quality and amount of the child's participation in things such as sports, hobbies, games, activities, organizations, jobs, chores, friendships, and school functioning. The CBCL can either be self-administered or administered by an interviewer, although the latter is discouraged. After the instrument had been completed, the 113 behavior problem items are separated into subscales which have already been determined by factor analysis, based on the sex and age of the child. The twenty social competence items are divided among three subscales: activities, social, and school. The clinical cutoff of this instrument is usually considered to be the 90th percentile for the behavior

problem scores and the 10th percentile for the social competence scores. The actuarial cutoff is 2 standard deviations from the mean - the 98th percentile of the behavior problem scores and the 2nd percentile of the social competence scores. Clinical cutoffs are used because some clinicians feel that the actuarial cutoffs are too stringent.

The Reliability and Validity of the CBCL

The different types of reliability that were computed will be discussed below. To assess test-retest reliability, two ICC's were computed; one at one week and one at three months. After a one week interval the ICC was .952 for the 113 behavioral problems and .996 for the 20 social competence items for 72 children. After a three month interval the ICC was .838 for the 113 behavioral problems and .974 for the 20 social competence items for 12 children. Interparent agreement of 168 children showed an ICC of .985 on the 113 behavior problems and .978 on the 20 social competence items. Even though the CBCL is mainly a self-administered instrument, an inter-interviewer reliability measure was obtained because interviewers do administer the CBCL from time to time. Using three interviewers, the ICC was .959 for the 113

behavior problems and .927 for the 20 social competence items. All of the ICC's were significant at a $p < .001$ level (Achenbach & Edelbrock, 1983).

Three different types of validity were tested: content, construct, and criterion-related. Achenbach & Edelbrock (1983) found that clinically-referred children had higher scores than non-referred children with similar demographics on 111 of the 113 behavior problems. The two that were not significantly different were "allergy" and "asthma". On all of the 20 social competence items, the clinically-referred children received significantly lower scores than the non-referred children. As evidence for construct validity, correlations between total behavior problem scores and the subtest scores on the CBCL and other widely used parent rating forms are as high as correlations found between intelligence tests. To determine criterion-related validity, Achenbach & Edelbrock (1983) found significant differences ($p < .001$) between demographically matched non-referred and referred children on all Profile scores for all age/sex groups (Achenbach & Edelbrock, 1983).

Literature Review

After doing an extensive periodical search and accessing data from a

disk entitled Bibliography of Published Studies Using the Child Behavior Checklist and Related Materials (Achenbach, 1991), only a handful of relevant studies were discovered. Out of all of the studies performed on learning disabled children, only four used the CBCL, and four used the BPC or RBPC. These eight relevant studies are grouped below according to the following categories: boys aged 6-11, boys ages 12-18, girls ages 6-11, and girls ages 12-18. In this section studies will be reviewed on these four age categories, but first the definitional criteria used in these studies will be examined.

Each of the studies cited below used specific criteria for the assessment of the learning disabled children studied. In the studies done by Epstein et al., the learning disabled children were identified under state and school district criteria as eligible for special services for the learning disabled. The principal criteria were (a) intelligence in the normal range as determined by performance on a standard IQ test, (b) severe achievement deficits in reading and/or arithmetic, and (c) normal sensory acuity (Epstein, Cullinan, & Rosemier, 1983; Epstein, Cullinan, & Nieminen, 1984; Epstein, Bursack, & Cullinan, 1985; Epstein, Cullinan, & Lloyd, 1986; and Epstein & Cullinan, 1984). In the McConaughy & Ritter (1986) and the McConaughy (1986) studies, the learning disabled students were referred to the Center for Disorders of

Communication of the University of Vermont in Burlington, Vermont. Then they were given an IQ test to rule out mental retardation as part of their learning disability. In the study done by Ritter (1989), a recent psychoeducational evaluation was performed and an IQ test was given. Rosenberg, Harris, & Reifler (1988) used the criterion of demonstrated reading and mathematics achievement levels that were more than 2 years below that expected for their age and/or intellectual level and an IQ test was also given.

Boys 6-11

The limited research available suggests that learning disabled children experience a great deal of social-emotional and behavioral problems in addition to their learning difficulties (McConaughy & Ritter, 1986; Epstein et al., 1986). The relevant literature on boys aged 6-11 is reviewed in this section. In a study using the CBCL, 123 learning disabled boys aged 6-11 were rated as experiencing significantly more problems with behavior and social competence than non-learning disabled boys of the same age (McConaughy & Ritter, 1986). In this study, the CBCL was filled out by the child's parent. The parents of the learning disabled boys reported that the boys showed fewer social contacts with organizations and friends, less participation in activities, and lower levels of

school performance than non-learning disabled boys. The total number of behavior problems that the parents reported was in the actuarial cutoff range for children that are referred to mental health clinics.

Two studies that used the BPC showed that after a factor analysis of the 55 behavior items, the same four factors were found with the learning disabled boys in both studies: Conduct Problem, Anxiety Withdrawal, Attention Deficit, and Social Maladjustment (Epstein et al., 1983; Epstein et al., 1986). Teachers rated the learning disabled boys on the 55 items. In the ratings given by the teachers, hyperactivity and restlessness were associated with other attention items for younger children, while for older learning disabled boys hyperactivity and restlessness were associated with Conduct Problem (Epstein et al., 1983; Epstein et al., 1986). The authors believe this difference may be due to a developmental change in the behavior patterns of the learning disabled students, or the teachers may be applying different standards to the behaviors of younger and older learning disabled students (Epstein et al., 1986).

Boys 12-18

Most of the research done on learning disabilities has focused on elementary-aged boys; our ability to generalize findings to learning disabled

girls and adolescents is limited (Keogh, Major-Kingsley, Omori-Gordon, & Reid, 1982).

McConaughy (1986) did a study on social competence and behavioral problems of learning disabled boys aged 12-16 using the CBCL. On average, the parents' reports indicated that the learning disabled boys had significantly lower levels of social competence and more behavioral problems compared to the normative group of boys the same age. The learning disabled boys, compared to the normal boys, had high scores on several of the scales reflecting immaturity, hostile-withdrawal, aggressiveness, and hyperactivity. Compared to the younger boys in the McConaughy & Ritter (1986) study, the older learning disabled boys showed significantly lower scores in social competence. The younger learning disabled boys exhibited more problems reflecting depression and obsessive-compulsive behaviors, but the older learning disabled boys showed behaviors related to general immaturity not evident at younger ages (McConaughy, 1986). This difference reflects changes in the types of syndromes identified for each age group by Achenbach & Edelbrock (1983) and in behavior problems associated with learning disabilities.

Epstein did three studies on boys aged 12-18 using the BPC and performed a factor analysis on the results (Epstein & Cullinan, 1984; Epstein et

al., 1985; Epstein et al., 1986). All three studies showed almost the same factor structures; three of the four structures in all three studies were Conduct Problem, Socialized Delinquency, and Immaturity/Inadequacy. The fourth factor was Anxiety-Withdrawal in the Epstein et al, 1985 and Epstein et al, 1986 studies and Personality Problem in the Epstein & Cullinan, 1984 study. Epstein & Cullinan (1984) concluded that learning disabled boys may actually display Personality Problems (which may subsume the Anxiety/Withdrawal factor), but teachers perceive more of a Conduct Problem. The Attention Deficit factor did not appear as it did in the Epstein et al. (1983) study of learning disabled boys aged 6-11. However, as a single item, hyperactivity loaded the highest on the Conduct Problem factor for the older learning disabled boys in all three studies.

Girls 6-11

It is difficult to draw specific conclusions from much learning disabilities research because of the heterogeneity of the samples that are studied; this also limits our ability to compare findings from different studies (Epstein et al., 1984). Potentially important age and sex differences among the learning disabled have gone virtually unstudied. Through the extensive

periodical search, no studies were found that used the CBCL ratings on girls aged 6-11.

Epstein et al. (1984; 1985; 1986) have done three studies using the BPC to study behavior problems among learning disabled girls aged 6-11.

According to Epstein et al. (1984), young learning disabled girls seem to exhibit both social and academic disabilities compared to their peers. They may be more severely handicapped than those identified as learning disabled later in their schooling. In the Epstein et al. (1985) study, after a factor analysis was done, the Attention Deficit factor found resembled that of the Attention Deficit factor found in the Epstein et al. (1983) study of younger learning disabled boys. Among the younger learning disabled girls, similar to the Epstein et al. (1983) study, hyperactivity clustered with attention problems. In a subsequent study, Epstein et al. (1986) found different results from their previous (1985) study. Items that loaded on Anxiety-Withdrawal and Social Incompetence in the 1985 study loaded on Personality Problem and Nervousness in the 1986 study. Upon further examination, the Personality Problem factor was found to combine the Anxiety-Withdrawal and Social Incompetence factors, but the Nervousness factor was unique to this study. The authors were unable to explain the differences found.

Girls 12-18

To date, there have been few studies that have specifically focused on girls with learning disabilities (Ritter, 1989). Only one study was found in which the CBCL was used to rate girls aged 12-16 and three studies were done using the BPC.

Ritter (1989) did a study in which parents made reports of their child's competence. It was found that learning disabled adolescent girls exhibit poorer social competence and significantly greater behavior problems than non-learning disabled adolescent girls. The learning disabled girls scored in the clinical range on Total Behavior Problems and Internalizing and Externalizing behavior problems. All eight of the subscales were clinically elevated for the Learning Disabled group. Compared to the girls in the clinical sample, the learning disabled girls scored higher on the Hyperactive/Immaturity behavior and Somatic Complaints but lower on Delinquent behavior and Aggressive behavior.

The two studies done by Epstein et al. (1985; 1986) using the BPC showed the same four dimensions after a factor analysis was done: Aggression/Delinquency, Inadequacy, Attention Deficit, and Anxiety. Depression loaded fairly high on the Anxiety-Withdrawal factor. For older

learning disabled girls, many of items loaded highly on factors that indicated aggression and disruption (Epstein et al., 1985). In the replication study done by Epstein et al. (1986), some results were confirmed. Aggression-Delinquency was the first factor found for older learning disabled girls as opposed to Conduct Problem. Aggression-Delinquency differs from Conduct Problem because it includes many items that indicate delinquent and anti-social behavior.

In Epstein et al. (1984), learning disabled girls were compared to non-learning disabled girls. A split-plot factorial analysis of variance was done on the 55 items on the BPC. Four dimensions were found to compare the two groups on: Conduct Disorder, Personality Problem, Inadequacy-Immaturity, and Socialized Delinquency. The only significant difference found for the older learning disabled girls was that they scored higher on the Personality Problem dimension than the younger learning disabled girls. The main effect for Category (learning disabled vs. non-learning disabled) indicated that learning disabled girls, compared to non-learning disabled girls, were seen by their teachers as exhibiting more behavior problems.

Boys and Girls 6-11: Combined Samples

Part of a study done by Vaughn, Hogan, Kouzekanani, and Shapiro (1990) used the RBPC. In this study the RBPC was filled out in both the fall and the spring of the same school year. There were four groups of kindergarten students; each group consisted of nine boys and one girl. The four groups were learning disabled students prior to identification (LDPI), low-achieving (LA), average-achieving (AA), and high-achieving (HA). The children in the LDPI groups were later diagnosed as learning disabled. The raters in this experiment were the teachers of the children. The analysis of the data was done through a multi-variate analysis of variance with subsequent univariate F-tests. The results showed that in the fall, LDPI children had significantly higher problem scores on the Attention Problem subscale than did the other three groups. Further, in the spring, the LDPI children's scores were significantly higher than those of the AA and HA groups. There were significant between-group differences in the spring on the Anxiety-Withdrawn and Psychotic Behavior subscales. The results suggest that teachers identify attention problems as being more problematic with LDPI students than with other students, and these problems can be detected as early as kindergarten.

In summary, there have only been three studies done using the CBCL to

compare learning disabled and non-learning disabled students; they were conducted on boys 6-11, boys 12-16, and girls 12-16. All of these studies suggested that the learning disabled children had lower social competence and more behavior problems than the non-learning disabled children.

These studies have shown that there seem to be some behavioral and emotional differences between girls and boys, and learning disabled and "normal" children, and that the severity of these differences may vary according to age. Most studies comparing boys and girls or age groups have been done using the BPC. No such studies to date have been done using the CBCL.

Parent and Teacher Evaluations

In the Epstein studies, the BPC was filled out by the teachers of the children in the study. In the McConaughy and Ritter studies, the CBCL was filled out by a parent of the child. Rosenberg et al. (1988) did a study comparing parent and teacher observations of the behavior of children with learning problems. The mothers and teachers of seventeen boys (averaged age 10.5) completed the CBCL. No significant differences were found between

parent and teacher ratings in their average scores on the three measures (Sum T, Internalizing T, and Externalizing T scores), but they varied in their agreement as to the extent of the behavior patterns displayed by each child. Their agreement varied the most on the deviant internalizing behaviors; the younger the child, the greater the difference in rating between the parent and teacher. There were no other significant differences found.

Research has shown that under some conditions the learning disabled label biases teacher's evaluations of students (Foster and Ysseldyke, 1976). In a study done by Dukes and Saudargas (1989), 80 regular classroom teachers observed learning disabled and non-learning disabled students on videotape. These students were engaged in activities with special education teachers. The results of this study show that the teachers' ratings at the pretest differed according to the assigned label (the teachers rated learning disabled children lower on Creativity, Verbal Intelligence, and Orientation to Task, and rated them higher on Distractibility and Introversion), but after viewing the videotape, the teachers rated the two groups with no significant differences. This finding suggests that teachers may hold initial biases about the behavior of learning disabled and normal children, but they do take into account the classroom cues and events when rating actual behavior.

Objectives and Rationale of This Study

The primary goal of this research project will be to determine if there are any differences between children referred for learning disability assessment at a psychology clinic, the clinical sample of children from the CBCL, and the normative sample from the CBCL. The objectives of this study will be:

1. To gain a better understanding of the behavioral and social competence differences between learning disabled and non-learning disabled children on a global level.
2. To determine if there are systematic differences between age groups of learning disabled children on behavior problems and social competence.
3. To determine if there are systematic differences between learning disabled boys and girls on behavior problems and social competence.
4. To determine if a profile of learning disabled children can be found based on CBCL scores.

The rationale for this study is based upon the following:

1. More general information is needed about behavioral and emotional characteristics of learning disabled children.
2. There are a number of clinical hypotheses about emotional and behavioral problems in learning disabled children, but very little empirical data. This study will add to the empirical data in the field.
3. Only three studies comparing learning and non-learning disabled children have been done using the CBCL, and all three of these studies were done on one specific sex and age group of children. There is a need for more comprehensive information on the CBCL characteristics of learning disabled children.
4. The reliability figures for the BPC are not very high, and therefore a more reliable instrument like the CBCL needs to be used with learning disabled children.

Hypotheses

1. On the social competence subscale of the CBCL, learning disabled students will be rated lower than the non-clinical sample. This hypothesis is based on literature already reviewed on behavioral/emotional problems of learning disabled children vs. "normal" children.
2. On the school competence scale of the CBCL, learning disabled students will score lower than the non-clinical and the clinical samples. This hypothesis is based on literature already reviewed on behavioral/emotional problems of learning disabled children vs. "normal" children. Learning disabilities have been shown to affect school performance; therefore, the learning disabled students may also be rated lower than the clinical sample.
3. The learning disabled students will be rated higher than the non-clinical sample on the hyperactivity, aggressiveness, and delinquency syndrome scales of the CBCL. This hypothesis is based on literature already reviewed on behavioral/emotional problems of learning disabled children vs. "normal" children.

4. Younger learning disabled children (aged 6-11) will be rated lower than older learning disabled children (aged 12-16) on the delinquency syndrome scale of the CBCL. This is based on the fact that Epstein et al. (1986) found Socialized Delinquency as one of the four factors for boys aged 12-18, but did not find this factor for boys aged 6-11.
5. Younger learning disabled girls (aged 6-11) will be rated lower than older learning disabled girls (aged 12-16) on the depression syndrome scale. In the Epstein et al. (1985) study, depression loaded as a fairly high item on one of the factors found for learning disabled girls aged 12-18, but depression did not load on any of the factors found for learning disabled girls aged 6-11.
6. Younger learning disabled girls (aged 6-11) will be rated higher than older learning disabled girls (aged 12-16) on the cruel syndrome scale of the CBCL. In the Epstein et al. (1985) study, Aggression-Delinquency was found as the first factor for learning disabled girls aged 12-18, but no such factor was found for learning disabled girls aged 6-11.

Method

Subjects Forty-three children who presented at the UCLA Psychology Clinic for assessment of learning problems were studied. There were twenty-nine boys and fourteen girls in this sample. The ages of the children ranged from five to sixteen years with a mean age of 9.2 years. These children were from the Los Angeles area and were from a variety of ethnic and socioeconomic backgrounds. There were twenty-eight white students, seven black students, four hispanic students, two asian students, one native american student, and one student classified as other. The mean age was 9.2 years and the median income was \$26,000. The clinical sample from the CBCL norms was used as the clinical comparison group and the non-clinical sample from the CBCL norms was used as the control group.

Procedure These children were initially given an intake interview, at which time they or their parent/guardian filled out a questionnaire that contained background information. During the interview, relevant information about learning problems was obtained. If after the interview they chose to continue with the assessment procedure, then testing was done. The testing consisted of

approximately three sessions in which a variety of tests including the CBCL were administered. After the testing sessions, a follow-up feedback session was conducted to go over results, and diagnoses were given. No specific identifying data were gathered, so no one would be identifiable by name and/or address.

Measures The CBCL was one of the tests that was administered and it was the only test examined for this study. The mother of the child filled out the CBCL in the waiting room while her child was being assessed.

Analyses

Primary Analyses For hypotheses one, two, and three (a-c), one sample t-tests were performed to compare the learning disabled students to the non-clinical and clinical groups. For hypotheses four, five, and six, two sample t-tests with unequal N's were performed to compare the older and younger learning disabled students.

Secondary Analyses Descriptive statistics (i.e., means and standard deviations for each group on each CBCL scale) were obtained. Correlations were also obtained between all relevant variables. I also performed t-tests between the learning disabled sample and the clinical group on social competence, hyperactivity, aggressiveness, and delinquency.

Results

Primary Analyses

T-tests and η^2 tests were performed to analyze all of the primary hypotheses. On hypothesis one, where I predicted that learning disabled students would be rated significantly lower than the non-clinical group on the Social Competence Subscale of the CBCL, I found that the learning disabled students (mean $T=39.4$) were in fact rated significantly lower than the non-clinical group (mean $T=48.9$) ($p < .0005$, $\eta^2 = .57$) (see figure 1). On hypothesis two, I predicted that learning disabled students would be rated significantly lower than both non-clinical and clinical groups on the School

Competence Subscale of the CBCL. This hypothesis was also supported; I found that the learning disabled students (mean $T=31.7$) were rated significantly lower than the non-clinical group (mean $T=49.6$) ($p < .0005$, $\eta^2 = .68$) and the clinical group (mean $T=37.7$) ($p < .0005$, $\eta^2 = .55$) (see figure 2). On hypothesis three (a, b and c), I predicted that the learning disabled students would be rated significantly higher than the non-clinical group on the Hyperactive, Aggressiveness, and Delinquency Syndrome Subscales of the CBCL. These hypotheses were also supported. I found that the learning disabled group (mean $T=64.4$) was rated significantly higher than the non-clinical group (mean $T=53.6$) on the Hyperactive Subscale ($p < .005$, $\eta^2 = .99$) (see figure 3); the learning disabled group (mean $T=60.9$) was rated significantly higher than the non-clinical group (mean $T=57$) on the Aggressiveness Subscale ($p < .0005$, $\eta^2 = .96$) (see figure 4); the learning disabled group (mean $T=59.6$) was rated significantly higher than the non-clinical group (mean $T=57.8$) on the Delinquency Subscale ($p < .05$, $\eta^2 = .99$) (see figure 5). On hypothesis four, it was predicted that younger learning disabled children would be rated significantly lower than older learning disabled children on the Delinquency Syndrome Subscale of the CBCL. This hypothesis was not supported; I found no significant difference ($p > .05$) (see

figure 6). On hypothesis five, it was predicted that younger learning disabled girls would be rated significantly lower than older learning disabled girls on the Depression Syndrome Subscale of the CBCL. Here, I also found no significant difference ($p > .05$) (see figure 7). On hypothesis six, it was predicted that younger learning disabled girls would be rated significantly higher than older learning disabled girls on the Cruelty Syndrome Subscale of the CBCL. This hypothesis was also not supported; I found no significant difference ($p > .05$) (see figure 8).

Secondary Analyses

Descriptive statistics were obtained on all of the variables. The standard deviations of each CBCL scale T-score for the learning disabled subjects were close to the non-clinical and clinical norms of the CBCL (i.e., around ten). The median income was \$26,000, which would suggest that economically, the subjects' families are reasonably representative of the US population.

Significant correlations were found between scores on the Obsessive-Compulsive and Aggression, Schizoid-Anxious and Depression, and Somatic Complaints and Schizoid scales. T-tests were performed between the learning

disabled and non-clinical groups on twenty-five of the twenty-six CBCL subscales. The twenty-sixth subscale was Obese; only one subject was scored on that scale, so no analyses could be performed. On nineteen of the twenty-one Behavior Problem Subscales, learning disabled students were rated significantly higher ($p < .005$) than the non-clinical group. The two scales that were not found to significantly differ were Anxious-Obsessive and Depressive-Withdrawn. On three of the four Social Competence Subscales, learning disabled students were rated significantly lower ($p < .005$) than the non-clinical group. The scale that was not found to significantly differ was the Activities Subscale. When doing these t-tests my alpha level was set at $p < .01$ to minimize the likelihood that the significant findings would be due to chance.

The learning disabled sample was also compared to the clinical sample on the Social Competence Subscale, the Hyperactivity Subscale, the Aggressiveness Subscale, and the Delinquency Subscale. The learning disabled group (mean $T=39.4$) did not significantly differ from the clinical group (mean $T=37.7$) on the Social Competence Subscale ($p > .05$) (see figure 1). The learning disabled group (mean $T=64.4$) was rated significantly lower than the clinical group (mean $T=68.5$) on the Hyperactivity Subscale ($p < .0005$, $\eta^2 = .99$) (see figure 3). The learning disabled group (mean $T=60.9$) was also

rated significantly lower than the clinical group (mean $T=67.7$) on the Aggressiveness Subscale ($p < .005$, $\eta^2 = .97$) (see figure 4). The learning disabled group (mean $T=59.6$) was also rated significantly lower than the clinical group (mean $T=67.8$) on the Delinquency Subscale ($p < .0005$, $\eta^2 = .99$) (see figure 5).

Discussion

After performing analyses on my predicted hypotheses, some interesting results were found. As noted, the learning disabled group was rated significantly lower than the non-clinical group on the Social Competence Subscale of the CBCL. This indicates that learning disabled students are rated as having more social problems than are non-clinical students. This can be due to the fact that children with learning disabilities are often ridiculed and rejected by peers so in turn these children are not able to develop the proper social skills. Also, as one might guess, learning disabled students were rated significantly lower than non-clinical and clinical groups on the School Subscale of the CBCL. The learning disabled students were brought to the clinic for learning disability assessment; therefore, poor school performance was expected. On the three behavior problem subscales for which hypotheses were

made--Hyperactivity, Aggressiveness, and Delinquency--the learning disabled students scored significantly higher than the non-clinical group. This would indicate that the learning disabled students were rated high enough (approximately one standard deviation or more above the mean) to indicate that they are having some behavioral/emotional problems. When analyses were performed within my learning disabled group (i.e., on age and sex), I found no significant difference on the predicted behavioral/emotional problems of delinquency, depression, and cruelty. This would seem to indicate that my sample was very homogenous on these variables. After doing further analyses between the learning disabled and non-clinical groups on the remaining scales of the CBCL and finding that the learning disabled students were rated significantly higher on more than 90% of the behavior problem scales and significantly lower on 75% of the social competence scales, it could be concluded that learning disabled students have significantly more behavioral/emotional problems and more social competence problems than non-clinical students.

Limitations

There were several limitations to this study that should be noted. First, there was a small female sample. Only one-third of the total sample was female and this posed a problem when conducting analyses on the female subjects alone. Second, no data were collected on the family background of the learning disabled students (e.g. single parent home) which could have has an impact on results. Third, all of the subjects came from one geographic location; therefore, the conclusions may not be generalizable to all learning disabled students. Fourth, the CBCL's were filled out by parents (mothers in particular), so their opinions of their own children might be skewed. Fifth, no comparable non-clinical and clinical groups were used as controls; instead the non-clinical and clinical normative samples from the CBCL were used. The normative samples were obtained at a different time and from different geographic areas than my sample, which may limit comparability. Although these limitations are important to keep in mind, because of the degree of difference obtained between the groups, I still believe that the study and its conclusions are of great importance.

Implications

The implications of this study are very important. When a student is diagnosed with a learning disability, the people that work with him/her mainly focus on his/her poor academic skills. I wanted to find out if there are behavioral/emotional problems that are also found in learning disabled students. After doing analyses on twenty-five CBCL subscales and finding that the learning disabled group significantly differed from the non-clinical group on twenty-two of those subscales, I am convinced that learning disabled students are struggling with more than their homework. When professionals, teachers, and parents work with their learning disabled children they need to be aware of the fact that these children not only need help in academic areas, but also with their behavior problems. In this study I am not trying to state whether these behavioral/emotional problems arose because of the learning disability or were there before the learning disability was found. I am simply arguing that we need to help these children in areas other than academics, and parents, educators, and psychologists should be aware of this.

Directions for Future Research

This study has led to some interesting directions for future research.

Another study should be done to replicate this study, except more female subjects should be used and a non-clinical and clinical group from the same area should be used for comparison. Another interesting study would be to have CBCL's filled out on learning disabled, non-clinical and clinical students by a mother and a father, the student's teacher, and the student him/herself so information could be obtained on whether parents and teachers are rating their children similarly. If they are not, then most of the studies that have been done with both the CBCL and the BPC may reflect a parental bias. This last study I hope to do for my Master's thesis in graduate school.

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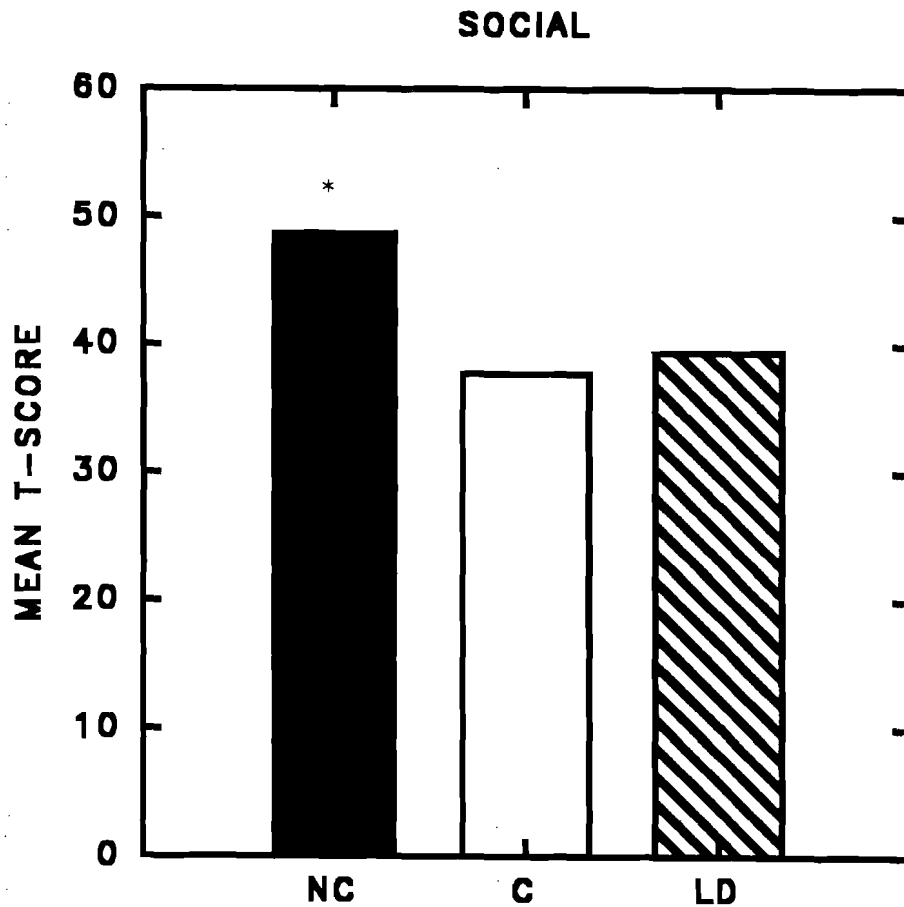
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FIGURE 1

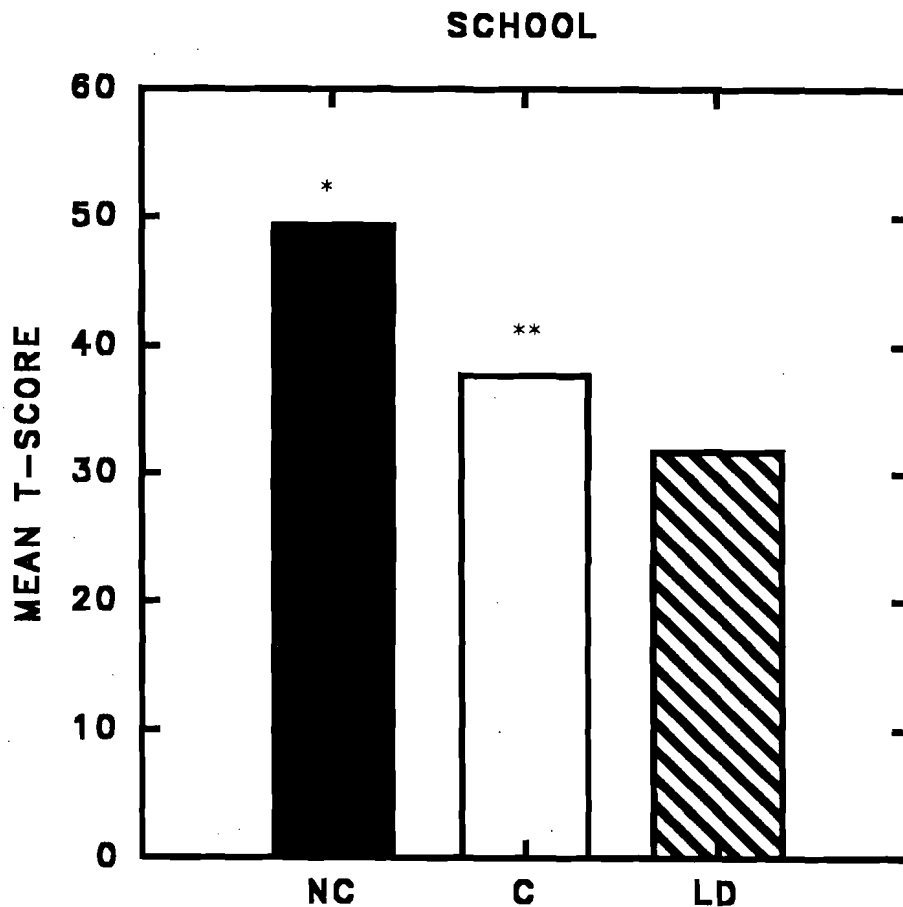
HYP #1: On the social competence subscale of the CBCL, learning disabled students will score significantly lower than the non-clinical sample.



* The learning disabled students significantly differed from the non-clinical group at $p < .0005$.

FIGURE 2

HYP #2: On the school competence subscale of the CBCL, learning disabled students will score significantly lower than the non-clinical and clinical samples.

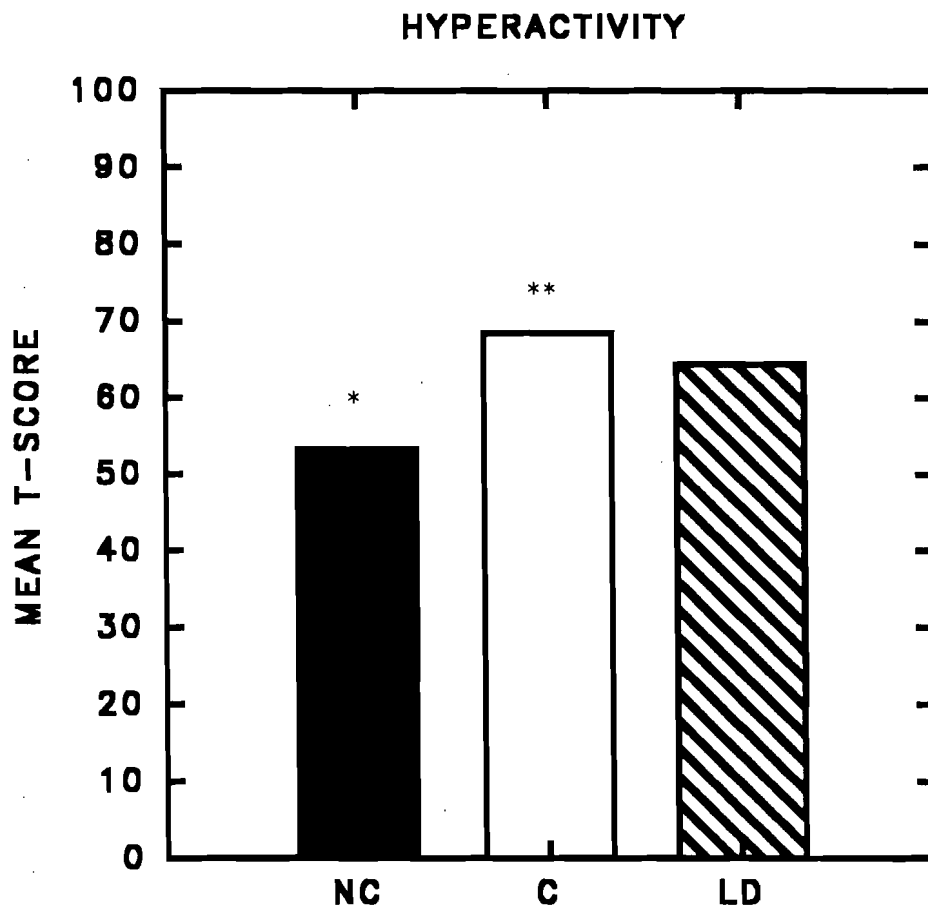


* The learning disabled students significantly differed from the non-clinical group at $p < .0005$.

** The learning disabled students also significantly differed from the clinical group at $p < .0005$.

FIGURE 3

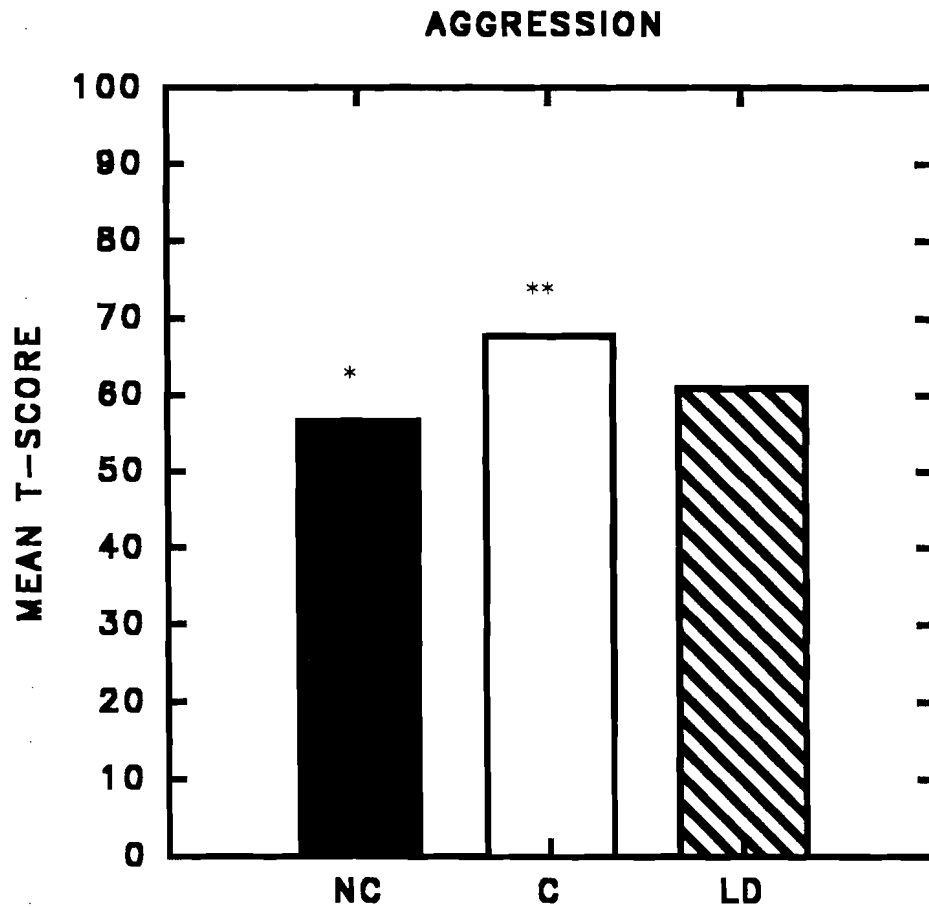
HYP #3A: The learning disabled students will score significantly higher than the non-clinical sample on the hyperactivity syndrome subscale of the CBCL.



* The learning disabled students significantly differed from the non-clinical group at $p < .005$.

FIGURE 4

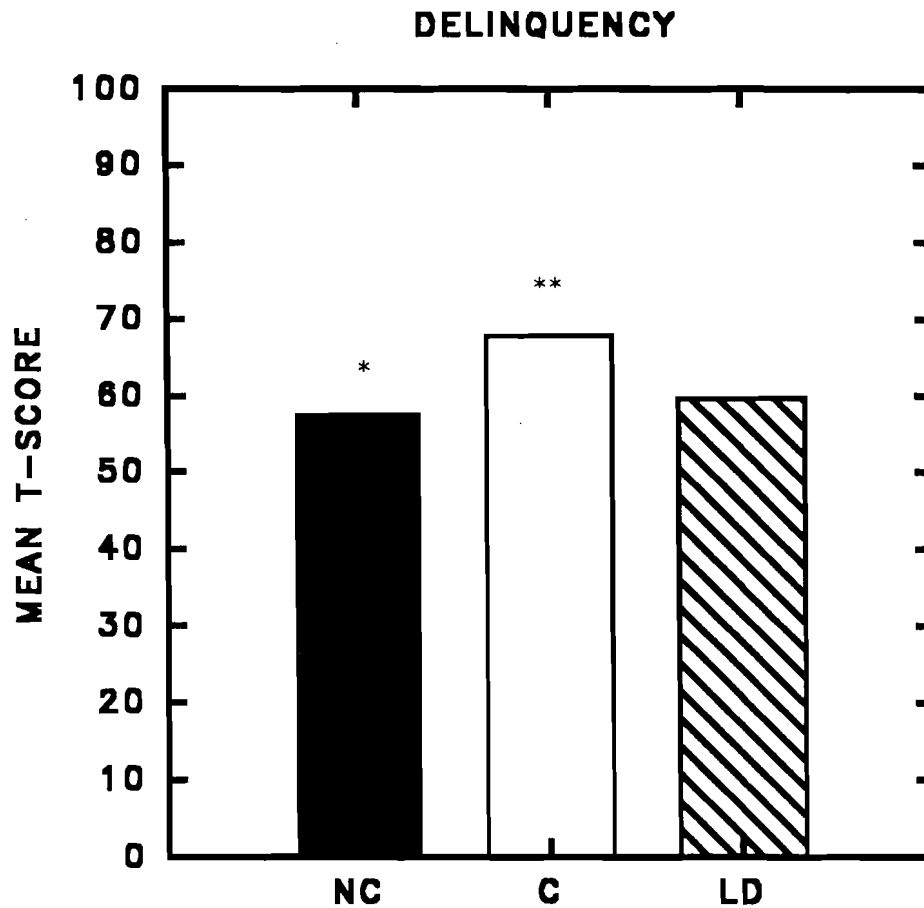
HYP #3B: The learning disabled students will score significantly higher than the non-clinical sample on the aggressiveness syndrome subscale of the CBCL.



* The learning disabled students significantly differed from the non-clinical group at $p < .0005$.

FIGURE 5

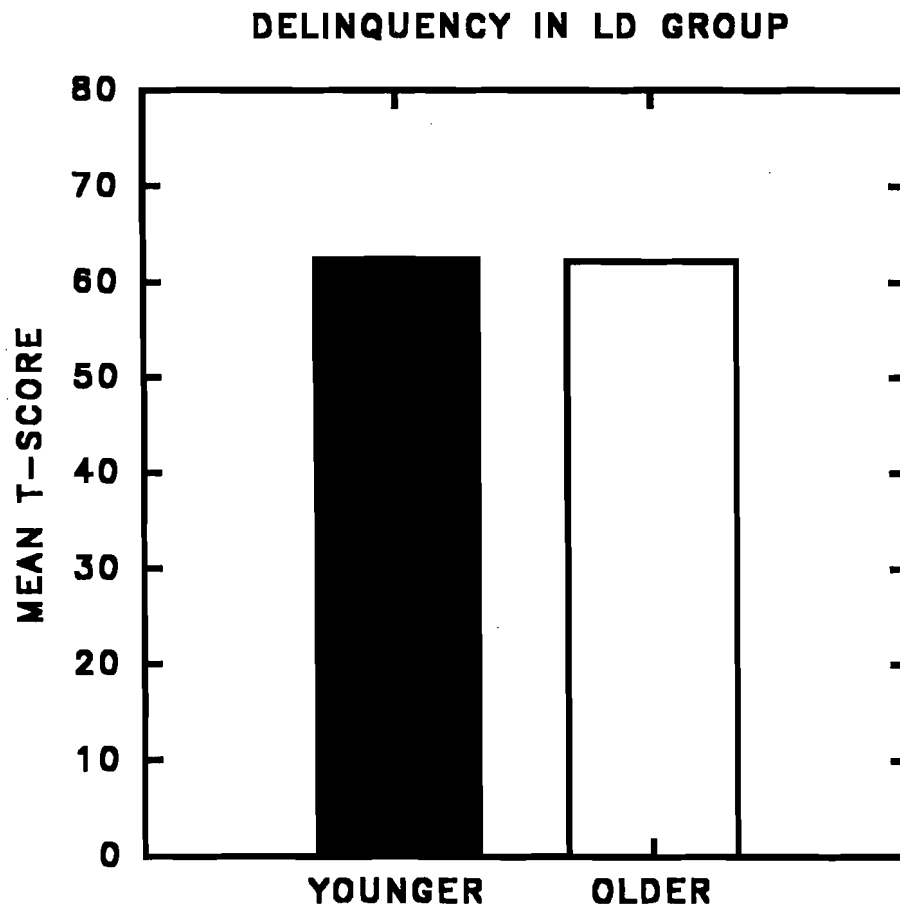
HYP #3C: The learning disabled students will score significantly higher than the non-clinical sample on the delinquency syndrome subscale of the CBCL.



* The learning disabled students significantly differed from the non-clinical group at $p < .05$.

FIGURE 6

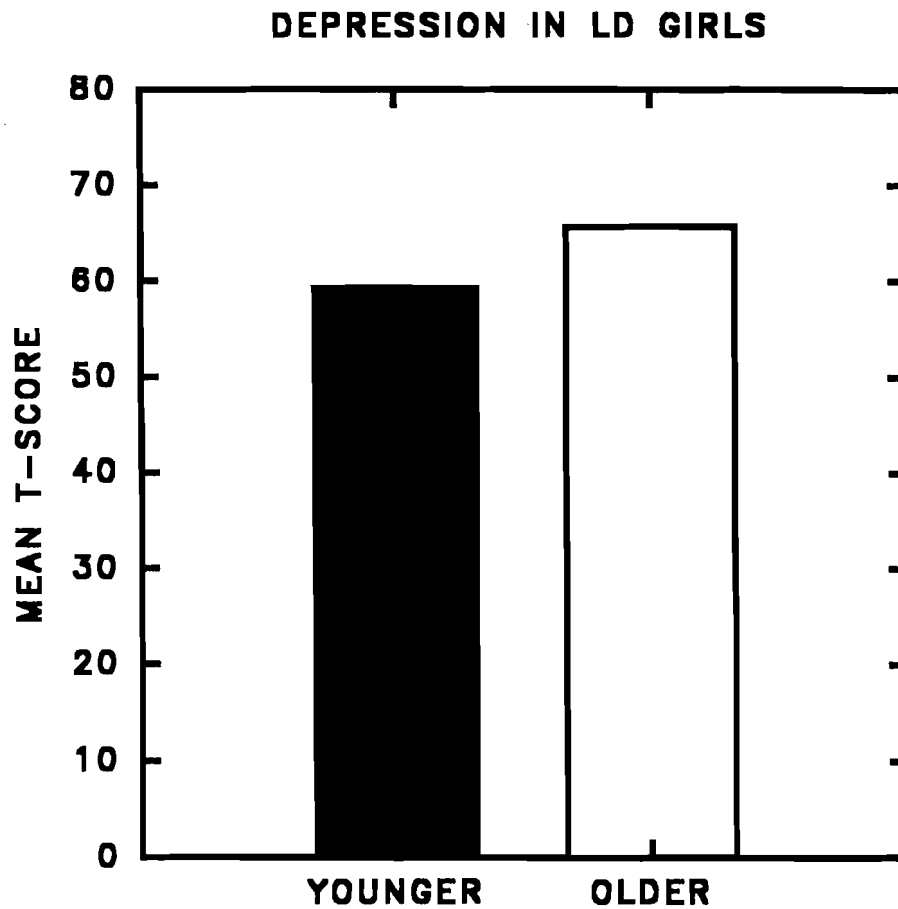
HYP #4: Younger learning disabled children will score significantly lower than older learning disabled children on the delinquency syndrome subscale of the CBCL.



* The younger learning disabled children did not significantly differ from the older learning disabled children at $p < .05$.

FIGURE 7

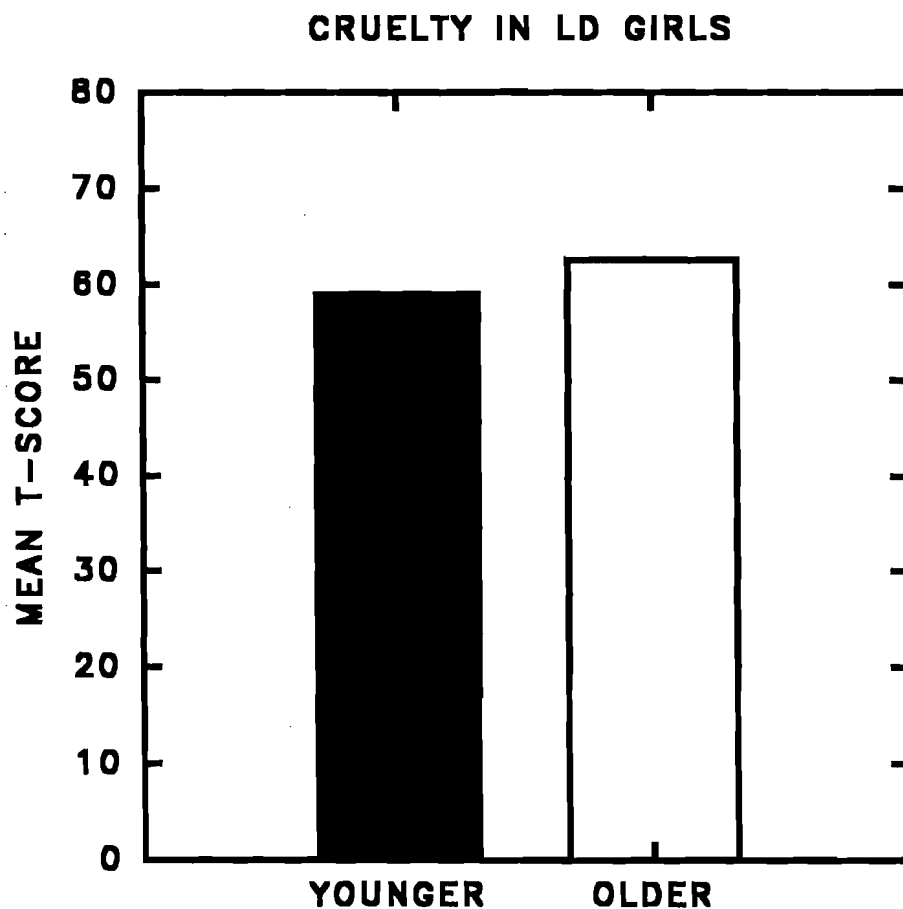
HYP #5: Younger learning disabled girls will score significantly lower than older learning disabled girls on the depression syndrome subscale of the CBCL.



* The younger learning disabled girls did not significantly differ from the older learning disabled girls at $p < .05$.

FIGURE 8

HYP #6: Younger learning disabled girls will score significantly higher than older learning disabled girls on the cruel syndrome subscale of the CBCL.



* The younger learning disabled girls did not significantly differ from the older learning disabled girls at $p < .05$.